371414

The Citrus Industry
EXCLUSIVE SPECIALIZED CITRUS PUBLICATION
Issued Monthly
Representative of every interest
Representing no special interest

Publication office at Bartow, Florida. Entered as second class matter February 16th, 1920, at the post office at Tampa, Florida, under the act of March 3, 1879. Entered as second class matter June 19, 1933, at the post office at Bartow Florida, under act of March 3, 1879.

Work Of Florida College Of Agriculture, 1939

By DR. WILMON NEWELL
PROVOST FOR AGRILCULTURE
UNIVERSITY OF FLORIDA

To review the activities of the College of Agriculture of the University of Florida in 1939 is a rather large order, not because of any scarcity of interesting things to report, but because of the difficulty of selecting those which can be mentioned in space at my disposal. The College of Agriculture has a great many activities, and in one way or another they affect every agricultural enterprise in Florida.

One hardly knows where to begin, but as facts are the basis for all operations, both in the University and on the farm, I think I will begin with the Experiment Station, which is the research division of our College of Agriculture. It is the business of the Experiment Station to dig out new information and to solve agricultural problems by experimentation.

A very nice unit, added to the Experiment Station system during the year, is the Vegetable Crops Laboratory, established at Bradenton on a fine tract of land given by Manatee County. This laboratory makes possible an expansion of the Experiment Station research program on the vegetable crops of the State.

One does not expect to see fields of clover in Florida, and, until very recently, none was seen. Now, however, there are as fine pastures of Dutch, hop and other clovers in Florida as one can see anywhere. Our Experiment Station workers have found out how to grow clover on our low moist lands — growing it in winter, however, instead of during the summer months as in the North. It is accomplished through the proper combination of seed inoculation, methods of planting, fertilizing, and use of lime.

New sugar canes developed by plant breeders of the Experiment Station have greatly increased the per-acre sugar production in the Everglades, while still other new varieties have just about doubled the syrup production on north Florida farms. New and more productive varieties of corn have also been made available.

At the Citrus Experiment Station at Lake Alfred, investigations have disclosed the visible symptoms in orange and grarpefruit trees of various mineral deficiencies in the soil. When the soil is deficient in any one of several minerals, such as zinc, copper, magnesium, or iron, the trees cannot function in a healthy way. Detecting these symptoms is the first step in correcting the troubles. Corrective methods have also been developed and are already in hundreds of thousands of acres of Florida citrus groves.

Other Experiment Station developments include improvements in supplying mineral supplements for livestock, initiation of cultural experiments with bright tobacco, new and effective control measures for several destructive plant diseases, and, among other surprising things, the discovery that shark liver oil contains approximately three times as much Vitamin A as cod liver oil and is now the most economical source of Vitamin A as a supplement in feeds for poultry.

Let us now turn to the Agricultural Extension Service, which is that branch of the University of Florida including the County and Home Demonstration Agents. The purpose of the Extension Service is to extend to rural farms and homes useful information from the University, the Experiment Station, and the United States Department of Agriculture.

To my mind, the outstanding development of the year has been the establishment of the State Land-Use Planning Committee in the organization of which the Agricultural Extension Service has taken the lead. Proper use of land, whether for agriculture or otherwise, is fundamental to all welfare and prosperity. Too long have our lands been abused by erosion, over-cropping, and deforestation. A concerted nationwide effort is now being made to change this and to bring about intelligent use of land that will increase returns, and at the same time conserve and protect the land for future use. On the Florida State Land-Use Planning Committee

(Continued on page 20)

JUN 0 1953 VDERY

Some Symptoms Of Citrus Malnutrition In Florida

. . By . .
A. F. CAMP AND
B. R. FUDGE

(Continued from last issue)

Manganese Deficiency

Manganese deficiency in citrus does not have a definite common name, although the terms "marl frenching" and "marl chlorosis" have been applied to the leaf symptoms frequently exhibited by trees grown on marl soils. These generally are a mixture of zinc and manganese deficiency symptoms and are not readily correctible unless both elements are applied. The terms have, however, been connected with manganese deficiency in the minds of many growers. First responses to the use of manganese on citrus in Florida were reported by Skinner and Bahrt, and Skinner, Bahrt and Hughes. The responses found were improved growth, the correction of foliage chlorosis, increased production, and better fruit color; and Roy has reported a greatly increased manganese content in leaves from trees treated with manganese. Specific symptoms that could be used diagnostically were identified with the deficiency by Camp and Reuther, who described a characteristic leaf pattern. This symptom was described in more detail by Camp and by Camp and Peech. Skinner, Bahrt and Hughes had reported responses from manganese applications on acid as well as on alkaline soils and the leaf symptoms associated with the deficiency were found to be widespread on the light acid sandy soils throughout the citrus growing area. Failure to identify the symptoms associated with this deficiency earlier was probably due to the fact that it is commonly associated with zinc deficiency and its much more pronounced leaf symptoms which readily mask the pattern of manganese deficiency. As soon as zinc became widely used there was little difficulty in finding the symptoms of manganese deficiency in many groves following the correction of zinc deficiency.

The symptoms described in this section apparently are not exactly the same as those described by Haas in reports on solution and sand culture. This is quite probably due to the fact that manganese deficiency in the field in Florida is not so acute as that produced by him under controlled conditions and the symptoms are correspondingly modified. The pattern of fine green veins on a lighter green background as reported by Haas is found in young leaves but changes rapidly. The premature shedding of young leaves has not been noted but might exist in very acute cases.

Manganese deficiency of citrus in the field has so far been reported only from Florida. Since its definite identification followed only after extensive use of zinc it is entirely possible that it will be found in other areas where zinc deficiency is common.

Foliage Symptoms

Young leaves commonly show a fine pattern of green veins on a lighter green background. This pattern is somewhat similar to that on leaves of the same age affected by zinc deficiency but much less prounced and definite. By the time the leaves have reached full size the pattern has become somewhat more distinct as a band of green along the midrib and principal lateral veins with light green areas between the veins and, in severe cases, along the edge of the leaf. The yellow to white areas so typical of zinc deficiency do not develop and the contrast is so slight between the two shades of green as to make identification difficult in many instances. As the leaves mature the pattern may disappear if manganese is only slightly deficient and mature leaves may be entirely green. This presumably occurs under the conditions of a border-line deficiency in which the level of manganese supply is too low to meet the heavy requirements of vigorous growth but is still sufficiently high to more than meet the requirements when the tree is not growing vigorously. When the deficiency is more acute the pattern will persist throughout the life of the leaf. As the leaf matures its surface becomes dull in marked contrast to the normal shiny surface of citrus leaves. The light green areas become grayish and dark green areas remain a dull, dark green. In some cases the light green areas may become somewhat bronzed and for this reason this deficiency is occasionally classified as bronzing, although the term is commonly limited to the symptoms of magnesium deficiency.

The shape and size of the leaves is normal and the narrow pointed leaves characteristic of zinc deficiency are not associated with manganese deficiency. This is of considerable aid in diagnosing the symptoms on young leaves when the patterns might be confused.

Twig Symptoms

Manganese deficiency is seldom so acute in the field as to cause pronounced twig symptoms. However, in cases of acute manganese deficiency the growth is reduced and twigs die, giving the tree a weak and sparse appearance. The pronounced dying back on the periphery of the tree is not as apparent as in zinc deficiency but is distributed through the entire tree. Such trees respond with vigorous growth when subjected to corrective treatment.

Fruit Symptoms

Manganese deficiency may greatly reduce the crop; and the color of the fruit, in the case of oranges and tangerines, may be poor. Roy has reported an increase in sugar in the juice when manganese was added to the fertilizer. Skinner and Bahrt and Skinner, Bahrt and Hughes reported that the fruit was heavier and firmer following manganese treatment, and contained an increased amount of manganese. It is probable that as this deficiency is studied further some more distinct fruit symptoms will be established.

Modifications of Symptoms

Since the deficiency of manganese is frequently associated with zinc deficiency, combinations of the leaf symptoms of the two deficiencies are common. "Marl frenching" of grapefruit characterized by dark green veins with dull whitish green areas between the veins and with the whole leaf finally taking on a dull whitish gray cast is typical of this combination. On Temple orange foliage the same combination shows a bronze cast in the lighter portions of the pattern. When such trees are treated with zinc spray the resulting flush of growth is typical of manganese deficiency and the whittish cast disappeared. In such combinations the manganese deficiency is acute and the zinc deficiency relative-

ly mild, but when the reverse occurs the foliage shows the typical symptoms of zinc deficiency which completely mask the symptoms of manganese deficiency.

Varietal Susceptibility

Varieties of the mandarin group (tangerines, King oranges, etc.) are most commonly affected, with grapefruit next, and finally oranges, although there is little difference between the latter two. Temple oranges seem to be most commonly and most severly affected but untreated tangerine groves on light soils that do not show some symptoms are the exception.

Causation

Manganese deficiency of citrus in Florida was originally associated with marl soils which were definitely alkaline. This is in line with the findings that manganese is fixed in alkaline soils. Such soils when used for citrus in Florida are usually ridged to provide proper drainage and the ridge is made up of a mixture of acid top soil and marl subsoil. The pH varies from about pH 6.0 when little or no marl is mixed in the ridge to 8.0 if a large amount of the marl is included. The pH at which manganese is fixed has not been accurately determined but apparently it is above the neutral point (pH 7.0). The fixing power for manganese in such soils is high and Camp and Peech have shown that following applications at the rate of approximately 1,000 pounds of manganese sulfate per acre, less than one pound per acre of manganese remained in the exchangeable form after one year.

On the acid sands (below pH 5.0) the deficiency is probably brought on by the leaching of manganese. Such soils are consistently very low in exchangeable manganese, usually containing less than five pounds per acre and both the low pH and the consequent manganese deficiency can be blamed on improper fertilizer practices. Manganese deficiency can occur also on sandy soils when the pH is raised above pH 7.0 by overliming, although this is not common.

Treatment

Manganese sulfate is used either on the soil or combined with lime in a spray. Applications to marl soils must be relatively large, two to 10 pounds per tree of manganous sulfate, and must be repeated yearly to keep the grove in condition since manganese is rapidly fixed. If applications are to be made to light sandy soils, one to four pounds per tree is commonly used as an initial corrective treatment followed by much smaller amounts in the fertilizer for maintenance. It is usually recommended that acid soils be treated with basic material to bring the pH up to 6.0, since manganese is leached rapidly from the very acid sands.

Sprays are much more rapid in correcting the symptoms than soil treatments, and on marl soils a somewhat more lasting effect is obtained from a spray than from a moderate soil treatment. Were it not for the fact that residues from such sprays cause a build-up of scale manganese sprays would be more extensively used. At present sprays made up of 2 to 4 pounds of manganese sulfate per 100 gallons with half as much hydrated lime are commonly used as initial correctives and, when copper sprays are needed for pest control, manganese sprays are frequently used for maintenance on soils that have a high fixing power. Copper residues are almost certain to make a subsequent oil spray necessary and the addition of the manganese does not materially complicate the problem. Manganese sprays are combined with copper and/or zinc sprays and with lime-sulfur sprays, and manganous sulfate is sometimes neutralized with liquid lime-sulfur instead of lime in an effort to reduce the residue.

Magnesium Deficiency

Magnesium deficiency is commonly referred to in Florida as "bronzing" or "copper leaf," the latter term being largely obselete now. These terms are not specific and the term bronzing frequently has been used generally to designate any yellowing or bronzing of citrus leaves regardless of cause and then subdividing it into various specific types. Probably the first definite report on the value of magnesium in citrus fertilization was by Averna-Sacca in 1912. Reed and Haas working with sand cultures described symptoms of magnesium deficiency on citrus in 1924 and Bahrt, Bahrt and Hughes, Bryan and DeBusk, and Tait reported responses to the application of magnesium-bearing materials to citrus trees in the field and described symptoms associated with the deficiency of magnesium. Camp, and Fudge described the leaf symptoms associated with the deficiency in detail and the latter demonstrated the motivating role of fruit production in producing the symptoms. The occurrence of magnesium deficiency in Florida is not surprising since magnesium has been found generally deficient in the Atlantic coastal plain soils and particularly in the light sands such as are commonly used for citrus in Florida.

Foliage Symptoms

No symptoms of magnesium deficiency associated with young leaves have been identified in the field and the symptoms described below are those produced on mature leaves following the removal of magnesium to satisfy fruit requirements. During the summer, when a rapid increase in fruit size occurs, the symptoms appear on leaves close to the developing fruit as disconnected yellow areas lying along either side of the midrib. These areas gradually become larger and finally coalesce to form a large area of yellow tissue surrounding a triangular area of green tissue at the base of the leaf. At this stage the tip as well as the base of the leaf may be green. The yellow area may gradually enlarge until the entire leaf becomes yellow or bronze in color. By October or November, when the fruit is about mature, leaves in the vicinity of the fruit, and particularly those close to fruit clusters, will present all variations of the above stages of yellowing while leaves on the portion of the tree not bearing a crop will be normally green in color. The appearance in the grove is also irregular, with the amount of yellow foliage on individual trees varying with the size of the crop.

Leaves that have lost most of their green color drop freely, frequently leaving heavily laden branches practically defoliated. This dropping occurs rather soon in oranges and heavily cropped orange trees are frequently badly defoliated by December. Dropping of leaves in grapefruit is slower and many of the yellow leaves are retained until spring and shed just prior to spring growth. This droppage is increased by natural hazards that shock the tree and heavy dropping will follow cold weather, injurious sprays, or extremely dry periods.

Twig Symptoms

There are no primary twig symptoms associated as yet with magnesium deficiency but a secondary effect following defoliation is the death of many twigs due to infection by fungi. Fruits frequently are seen hanging on completely defoliated twigs six to 18 inches long and such twigs are naturally weakened and susceptible to infection. Infection may take place and the twig die before the fruit is picked, allowing the fruit to drop, or infection may set in following fruit removal. In either case the twig usually dies back to the point where growth was initiated and gum is frequently formed at the junction of dead and live wood, although this is probably indicative of infection. Not all defoliated twigs die but considerable pruning is always

(Continued on page 18)

Citrus Aphids . . .

By J. R. WATSON
ENTOMOLOGIST, FLORIDA
EXPERIMENT STATION

One of the pests which often sorely troubles citrus trees is the green citrus apid. Most of the damage which this insect inflicts is done in the spring to the first flush of growth. If the aphids are numerous this flush of growth is seriously stunted and the leaves are curled. A bud, which should make a branch from a few inches to a foot long with numerous leaves and perhaps blossoms, may be prevented from developing at all. If it does succeed in making some growth, the leaves may be tightly curled and very small. These small, curled leaves not only are incapable of nourishing the plant properly, but they make safe retreats in which purple scale and other pests multiply.

It is estimated that during the spring of 1924 this aphid damaged the citrus trees of Florida to the extent of $4,000,000. It has never been as bad since as it was during the springs of 1924 and 1925, being checked by unfavorable weather during the winter; too, there have not been such large numbers of young trees since. During a dry and cold winter where there is very little growth on the citrus trees, aphids will be scarce. but let there come a warm, moist winter, causing growth on the young citrus trees and aphids will be able to grow and multiply and their numbers may become very great and the damage may be serious by the time the main flush of spring growth comes.

This aphid must have tender growth for feed. It cannot live and reproduce on mature foliage, so the number of aphids and the amount of damage they do in the spring is determined largely by the weather in the winter, particularly that of December, January, and the early part of February.

It is expensive to fight an infestation of aphids, once they become numerous. The best insecticide we have ever found is a 3 per cent nicotine sulfate-lime dust. When put on during a quiet period, when there is no wind, this is very effective in killing aphids, but when aphids are flying about, the trees very promptly become reinfested, thus dusting has to be repeated, making control at blooming time an expensive procedure.

Prevention is always cheaper than control and this is the reason for our taking up this subject at this time when aphids are scarce in the groves. It should be our aim to keep them scarce. There are two forms of the green citrus aphid: a winged form and a wingless form. Which form will be developed depends chiefly on the food supply. As long as the foliage is young and tender, nine-tenths of the aphids will be of the wingless form, but when the foliage approaches full size and begins to harden up, nine-tenths of the aphids will frequently form wings and fly away. Winged forms will be scarce from now until early spring, so scarce that what few do develop will not be likely to leave the grove in which they are raised. In other words, there will be practically no migration of aphids from one grove to another until well along in the spring — until some of the spring growth begins to harden. This means that practically all the aphids a grower will have at blooming time will have been raised in his own grove during the next two or three months. It makes very little difference what your neighbor does, unless your grove is small and surrounded by other groves.

The proper preventive is to destroy all aphids found in the groves during the next two months. At this time of the year, when aphids are scarce, one is apt to consider a few colonies of no importance. As far as the damage they are doing is concerned, they are of no importance. The danger lies in their rapidity of multiplication. This aphid, under favorable weather and food conditions, will begin to produce young when only six days old, and its average rate of production for the first couple of weeks of its life under favorable conditions, is six young per day. With this extremely short life cycle and large numbers of young, it is easily seen that a very few aphids at this time of the year may produce immense numbers in two or three months.

If you have any doubts on this point, take out your pencil and figure how many off-spring a single aphid could have at the end of three months if it produced six per day with a generation every week. And remember they are all females. We have never seen a male on a citrus tree, nor, in the main citrus belt of Florida, on anything else. Of course, as a matter of fact, we never have this maximum reproduction. Aphids, as well as other things, have their enemies, syrphid flies, ladybeetles, and a fungus disease being among the most important. But these predators also have their enemies and diseases, so that they never can be depended upon to entirely prevent an outbreak, although they are a great help, especially the Chinese ladybeetle, which we have succeeded in establishing in at least three counties of the state. This extremely large beetle eats more aphids per day than a dozen native ones and, what is more important, we have not found it to be as highly parasitized by either wasp-like parasites or fungus and bacterial diseases as native ladybeetles.

The program, then, for the next two or three months, in aphid control, is to destroy every green citrus aphid seen in the grove. Weather conditions may prevent an outbreak of the aphids next spring, but destruction of the aphids during the winter time is an extremely cheap insurance against a possible outbreak.

Most aphids found during the winter are on young trees, and it is the young trees particularly that need attention. At this time of year, perhaps the most handy method of fighting aphids is to go through the grove once every week or 10 days with a bucket containing some good strong insecticide, such a nicotine sulfate or a pryethrum compound. Most of the colonies at this time of year will be out on the ends of branches which can be easily bent over into a bucket. Swish them around once or twice so as to thoroughly wet all aphids. A little soap or other spreader should be put into the bucket with the insecticide (nicotine sulfate) to facilitate the kill.

One grower I know keeps in his pocket a little sack containing a little nicotine sulfate-lime dust. Whenever he sees a colony of aphids, he bends the sprout into the bag, closes up the opening with his hand, gives it a shake or two, places the bag back in his pocket, and goes about his work. Other growers pinch off and destroy all colonies of aphids that they see at this time of year. Later on, when the aphids become more abundant on young growth further down the branches where they cannot be bent down into buckets, spot dusting may be resorted to, using 3 per cent nicotine sulfate-lime dust. If done on a quiet, warm day, this will be found very satisfactory.

Which ever method you choose, destroy all colonies of aphids from now until blooming time in the spring.

The Growers' Own Page

This department is devoted to the growers, for their use in giving expression to their views and a discussion of growers' problems. Any grower is welcome to make use of this department for the discussion of topics of interest. The only requirements are that the articles must be on some subject of general interest, must be reasonably short and must be free from personalities. The editor assumes no responsibility for views expressed, nor does publication imply endorsement of the conclusions presented.

THE NEED OF THE INDUSTRY

Mr. S. L. Frisbie,
Editor The Citrus Industry,
Bartow, Fla.,

My Dear Mr. Frisbie:

I note in your last issue that it is your twentieth anniversary, which reminded me that I circulated your magazine at the beginning in St. Lucie county of which Indian River county was then a part and also in Brevard county. I have had every issue of The Citrus Industry since that time and I wish to congratulate you upon the success you have made. I think I realized then that to attain the position of a permanent publication would be more difficult than you did, for your success would be measured by the success of the industry you represented.

I had discovered by that time what the real obstacles in the way of the successful distribution and marketing of citrus were, and that they were the same that had been overcome in co-operative marketing movements in other parts of the country before the industries involved in the co-operation became a success. From past experience I felt then that there were obstacles that would have to be overcome before the citrus industry could be made a financial success participated in by all the growers.

I felt that owing to my long experience and the fact that the department of agriculture at Washington in recognition of the part I had played in the organization of successful co-operatives, in the adjustment of freight and refrigeration rates, my connection with the distribution and sale of fruits and vegetables through the wholesale trade in all the large marketing centers of the country for twelve years, my writings and addresses upon these subjects, asked me to make application for a position in the marketing division of the department at Washington, I thought that I might make some suggestions that would be helpful in solving the marketing problems in Florida.

I accepted the invitation extended. The necessary papers sent me to be filled out were accompanied by a letter saying that "they thought I was just the man they were looking for." I filled out the papers but I was then three years past the age limit. They wrote me that they would waive the age limit in my case if it were not for setting a precedent.

I believed then, and I still believe, that the industry could have been brought to an FOB cash basis within two years. However, as this plan would have eliminated many high salaried positions and rendered unnecessary the services of many who were motivated more by what they could get out of it than they were by the interests of the growers themselves, nothing came of the suggestion.

Mr. Frisbie, you have often asked in your editorial page "Why This??" or "Why That?" or "What is the Matter with the Industry?" or "Why Do We Do This?" as in your last issue. The obstacles that have led you to make these inquiries have all had their origin in the mind of self-interest. As the industry is so interwoven with conflicting interests now, it would be more difficult, even if possible, to solve the growers' problems now than it would have been twenty years ago, and if the industry is saved at all and made anything like the success it should be, it will have to be done by the growers themselves, and that by extending their efforts beyond what they have yet anticipated.

I hope that your magazine, The Citrus Industry, may continue to exert its influence in seeking to find a better way, always adhering to your motto: "Representative of every interest; representing no special interest."

Sincerely yours,
GEO. T. TIPPIN,
Vero Beach, Fla.

MORE ABOUT GREEN FRUIT

Lansing, Mich., Dec. 15, 1939.
The Citrus Industry Magazine,
Bartow, Florida.
Gentlemen:

I have just read the letter of Mrs. J. B. Brower published in your December issue in which she calls attention to the shipment of immature fruit as having damaged the Florida fruit market.

I have also read the editorial in the same issue referring to the same subject. I was obliged to switch from

(Continued on page 21)

IRRIGATION
Ames Lockseam Slip Joint Pipe
Miller Lock Joint Pipe
Peerless Turbine Pumps
Worthington and Myers Centrifugal Pumps
The Cameron & Barkley Company
Machinery & Industrial Supplies
107 South Franklin Street Tampa, Florida
OUR 75TH YEAR OF SERVICE

New Florida Industry
Genuine Ames Lockseam Slipjoint Pipe and Ames Gasket End Quicklock Pipe For Irrigation
Now Being Made In Tampa By
W. R. AMES CO., OF FLORIDA
40th Street and Broadway, Tampa
THE CAMERON & BARKLEY CO.,
Tampa, Fla. Exclusive Distributors

The Citrus Industry

with which is merged The Citrus Leaf
Exclusive publication of the Citrus Growers and Shippers

Publication office 550 North Broadway, Bartow, Florida
Telephone ——— 269

Published Monthly by
ASSOCIATED PUBLICATIONS CORPORATION
S. L. FRISBIE - - - - - - - - President
S. LLOYD FRISBIE - - - - - - Secretary-Treasurer
A. G. MANN - - - - - - - - Production Manager

Subscription, $1.00 per year in advance

HOLLAND FOR GOVERNOR

The Citrus Industry is departing from an established policy of aloofness from participation in state politics and is taking an active part in the approaching gubernatorial campaign. This step is taken because we feel that we would be remiss in our duty to the citrus growers of the state if we failed to give our wholehearted support to an outstanding factor in the industry. We feel, too, that the citrus growers of the state would be derelict in their duty to themselves and their industry should they fail to give united support to one who has proven by his acts that he is a staunch friend of the industry.

In Spessard L. Holland, who recently announced his candidacy for Governor in the approaching democratic primary, the citrus growers of Florida have such an advocate. A native Floridian, Mr. Holland comes from a family of citrus growers, is himself the owner of grove properties, has long been associated as grove owner and as legal advisor with most of the important movements for the betterment of the industry. As state senator for the past eight years, he has taken a leading part in the enactment of legislation designed to protect the interests of citrus growers.

In his private, professional and political life, Mr. Holland has proven himself an individual of sterling worth, a man of strong convictions and the courage to defend them. A man of clean life, unquestioned honesty and integrity, purposeful and untiring in his efforts for the general welfare.

Without disparagement of any other candidate for the high position of Governor of the state, we believe that Spessard Holland possesses every qualification for the making of an able, conscientious and outstanding executive. We believe that he will make a governor of whom the entire state may be proud and with whom the interests of the citrus growers of Florida will be safely guarded. Believing this, The Citrus Industry gives its whole-hearted and unqualified support to Spessard L. Holland for Governor. We believe that he is entitled to, and that he will receive, that same degree of support from the citrus growers of the state. **No citizen of Florida, we firmly believe, is more worthy of such support.**

THE GROWERS' RESPONSIBILITY

In discussion of the disastrous practice of shipping immature and off-grade fruit to Northern markets most of us are inclined to place the entire blame on the shoulders of the shippers. It is true that much of the blame properly rests there. If shippers refused to ship anything but high grade fruit, the "green fruit" problem would be solved.

But, it is equally true that if the growers refused to sell anything but high grade fruit, the shippers would have nothing but quality fruit to ship.

After all, it is an industry problem, involving growers, packers and shippers. As long as the practice continues, each must share his portion of the blame — and the growers must pocket the loss. When and if the problem is solved, as every well-wisher of the industry hopes it may be, it must be by all factors in the industry working harmoniously toward a common end — with the growers taking the initiative and forcing the issue. The responsibility for starting such a movement rests with the growers.

TEXAS PROPOSES A PLAN

Texas Farming and Citriculture, a magazine published in the heart of the Texas citrus belt, tells of a price-fixing plan proposed for the control of the market by the shippers of the state. The magazine says:

"Definite steps were taken late in November to do something about the desperate marketing situation of the Texas citrus industry. A plan meeting general approval provides that a committee of representative shippers get together once a week, or as often as necessary, to set for each grade of grapefruit a uniform price to be quoted to the trade until another price is set in conformity with changed supply and demand conditions in the national citrus markets.

"The belief is that uniformity of prices for specified periods will restore a large measure of order to Texas citrus marketing, since such uniformity, if maintained, will retrive the lost confidence of buyers, enabling them to make purchases without fear of cut-price competition. The result should be a heavy increase of sales at fair prices to wholesalers and jobbers who have been afraid to handle Texas grapefruit this season except at the lowest quotations. Price stability will naturally benefit the growers.

"The success of the plan is up to the shippers. Since probably not more than twenty-five or thirty of them handle around ninety per cent of the tonnage of fresh grapefruit shipped, they should be able to get and keep the situation well in hand preventing, in co-operation with the growers, under-quoting by the small dealers, who, though very numerous, ship hardly more than five per cent of the fruit."

Should this plan be put in operation by Texas shippers the results will be watched with interest by citrus growers in other states. If it works in Texas, there is no reason why it should not work in other states — including Florida.

Reviewing This Season's Prices . . . To Date

By D. E. TIMMONS
Extension Economist in Marketing

Following a number of lean years, Florida citrus growers were hopeful that the 1939-40 marketing season would bring considerably better prices for their fruit, and enable them to pay off some of the mortgages which have been accumulating against their properties. Since the citrus industry is one of the state's largest agricultural enterprises, and the income from citrus is important to the business life of most of the state, everyone joined them in their hope. Since the season is now in full swing, let's take a moment and check up on the markets, to see whether the pre-season optimism has been justified.

One of the primary factors affecting citrus prices is the volume of shipments. Therefore, volume of shipments will be referred to quite often in this discussion.

Since there are numerous kinds of citrus, we will discuss prices of each kind separately, beginning with oranges, in order to avoid confusion. Orange production in Florida this year is estimated at 35,000,000 boxes or about 2 million boxes more than last year's production. It is not possible to tell the entire United States production since the California valencia estimate is not out. However, California navel and other mid-season oranges are less than last year's by almost 3 million boxes. Unless the California valencia crop for this year is larger than for last year, the entire United States production for this year should be approximately that of last year.

Prices of oranges thus far this season have averaged a little higher than for the same period last year but are at about the same level now. Orange prices this year started out considerably higher but fell at a very rapid rate until about the last of October; since then the price of oranges declined some but at a much less rapid rate. Orange shipments to date, though beginning quite a bit later than last year, about equal the shipments for a similar period last year; motor truck shipments are higher by approximately 400 carlot equivalent; boat and rail shipments about 50 cars less and mixed citrus about 150 cars more, making total shipments to date approximately 500 cars more than last year. According to newspaper reports of shipments during the last few days, the indications are that recent shipments have been greater than for almost any similar period on record.

Since most of the Florida oranges are consumed domestically it would seem, with prospects for better demand in view, this season's orange price should be higher than the average for last year. There are other factors which may upset this conclusion.

Like orange prices, grapefruit prices are affected by supply and demand. The Florida supply of grapefruit this year is considerably less than that of last year. The indicated production of all Florida grapefruit this year is 17,100,000 boxes as compared to 23,600,000 last year, or 6½ million boxes less than last year. United States production last year was almost 44 million boxes while this year less than 37 million boxes are indicated making the total United States production this year approximately 7 million boxes less than for last year, showing that most of the reduction in grapefruit production is in Florida. Florida shipments this season have been at less rapid rate than they were this time last season. Truck shipments of grapefruit to date are almost the same for a comparable date last year, but rail and boat shipments are more than 1,000 cars less.

The volume of grapefruit shipped from Texas this season is about the same as had been shipped this time last season.

Florida grapefruit shipments started at a later date this season than last and at higher prices. Like oranges, grapefruit prices fell quite rapidly. The fall in prices extended until about the last of October. From then until about November 24, prices rose rapidly, but the average for the week beginning November 27 was only a little more than the low point back in the latter part of October. The average prices to date are higher than for last season and almost equal to the average price to date for the 1937-38 season.

Most grapefruit used in the fresh form is consumed domestically but quite a large proportion of canned grapefruit is exported. It is likely that domestic demand will be somewhat better than last year, but export demand may not be as great, depending on the effects of war on exports.

Throughout this discussion we have made no distinction between Marsh Seedless and the seeded varieties of grapefruit. The seedless varieties have been higher in price but the trend in price for both varieties has been the same. The supply of seeded varieties is estimated to be relatively smaller when compared to last year's production. Marsh Seedless are estimated to be only about 1 million boxes less than last year's production, while the seeded varieties are approximately 5½ million less than last year.

Tangerine prices started off relatively low and until about one week ago the trend in prices was higher.

Prices recently at auction averaged about $1.26 for 4-5 bushel boxes or approximately $2.50 for standard box equivalent. Tangerine production this year is estimated at less than 3 million boxes as compared with almost 3½ million last year or about one-half million boxes fewer than this season. Most tangerines are marketed domestically and since the general demand is expected to be better than last year, the average price of tangerines this year should be better than for last year.

In making today's price comparison auction prices were used. Auction prices from time to time may be higher or lower relatively than f. o. b. or on-the-tree prices, depending somewhat on speculative demand and on the attitude of the grower concerning the general outlook. It is quite difficult to make definite comparisons between auction prices and net-to-the-grower prices. A number of studies have been made from time to time to determine the cost of getting fruit from grove to consumer. These figures will vary, since freight rates vary from one receiving place to another and terminal market charges vary. An important factor, too, affecting variation of price would be the method of refrigeration. Based on data from approximately 50 packing houses for the 1935-36 season, the charges for handling grapefruit from the grove to the auction market were $1.61 and for oranges $1.71. However, this will vary quite a bit from one packing house to another. Costs at some packing houses are

(Continued on page 14)

TO BREAK EVEN

THE PACKING HOUSE MUST SELL

FLORIDA ORANGES
FOR 23 CENTS MORE PER BOX
and
FLORIDA GRAPEFRUIT
FOR 18 CENTS MORE PER BOX

WHEN PACKED WRAPPED IN NAILED BOXES*
THAN
WHEN PACKED UNWRAPPED IN BRUCE BOXES**

HIGHER COSTS ON NAILED BOXES —

		Oranges	Grapefruit
1.	Higher overhead per box	$ .08	$ .08
	(Only 50% as much fruit can be put through the packing house when Nailed Boxes are used as when Bruce Boxes are used.)		
2.	Higher direct cost per box (Material and labor)	.15	.10
		$ .23	$ .18

This statement is the of
and it is believed that reser

*Standard 1-3 el N
**Standard 1-3 el B

PACKAGE RESEA

Rockaway, New Jersey — Lakeland, Florida

TO BREAK EVEN

THE RETAILER MUST BUY

FLORIDA ORANGES FOR 25 CENTS LESS PER BOX

and

FLORIDA GRAPEFRUIT FOR 20 CENTS LESS PER BOX

WHEN PACKED WRAPPED IN NAILED BOXES*

THAN

WHEN PACKED UNWRAPPED IN BRUCE BOXES**

HIGHER COSTS ON NAILED BOXES IN RETAIL STORES —

	Oranges	Grapefruit
1. Higher cost for unpacking and unwrapping fruit	$ .20	$ .15
(15 minutes more time is required to get the wrapped oranges in one nailed box ready for sale, — proportionately less time for grapefruit. Average labor rates, 40c per hour plus 100% overhead, 40c = 80c per hour)		
2. Reuse value of Bruce Box	.05	.05
	$ .25	$ .20

th of a careful survey,
ha esents a fair average

-3 el Nailed Boxes
-3 el Bruce Boxes

CH LABORATORY

a Mercedes, Texas — Pasadena, California

Control Of Termites In Citrus Groves

By J. R. WATSON
ENTOMOLOGIST, FLORIDA
EXPERIMENT STATION

The time of year is here when growers will be wanting to bank their young trees as a protection against a possible freeze this winter. The earliest date of a freeze which damaged young trees over the citrus belt of which we have record was that of December 12, 1934. Due to the possibility of a repetition of this early date of a freeze growers should have their trees banked as soon as possible. It is not advisable to bank trees earlier in the season than is necessary for protection against frost, because banked trees are liable to be attacked by insects, particularly during warm weather. The most destructive of these insects are termites, also called white ants, and in Florida, "wood lice."

Although resembling true ants in appearance, except for the color of the workers, which is dirty white, they are not at all closely related to true ants, but on the contrary are more related to cockroaches. However, they do have much of the colonial organization of true ants, with fertile females, called queens, males, and working casts. They are primarily feeders on wood, or materials made of wood. They are able to digest such unpromising material because of the presence in their intestines of minute organisms which breach up the wood. They feed mostly on rotting or at least dead wood, but on having consumed this and facing starvation they may attack living wood.

The danger in banking trees is that rotting wood, or at least dead wood, may be included in the bank. When the termites have consumed this they are liable to attack the bark of the young trees, often girdling them and, of course, causing their death. For this reason growers in banking their trees should take pains that no dead wood is included in the bank. Only good clean soil, preferably sand, should be used. It is also important that any dead branch or tissue which will be covered by the bank be removed before the tree is banked and the wound covered with some good asphalt paint or tar which will be repellant to the termites.

Whitewashing the trunks of trees will also help, providing the whitewash is made of liquid so it will stick closely to the bark of the tree. To each three gallons of whitewash add a handful of common salt to make it stick better. If the whitewash comes away from the tree in flakes it will be worse than if it was not used at all, as it will furnish a convenient hiding place for the termites.

The danger on including dead wood in the bank is greater, of course, in newly cleared land; the more so that it is such land that is commonly used for young citrus groves.

Another pest which should be excluded from the banks is the ant. Ants nesting about the base of young trees are very injurious, and will often kill it, particularly if the bank is put up too early or left too late in the spring; in other words, if present during warm weather. If the young trees has an ant nest around it the ants should be removed before the tree is banked. This is best done by digging out a shallow basin around the base of the tree and pouring into this basin a quart or so of carbolic acid emulsion. This is made by emulsifying a pint of crude carbolic acid, a pound of soap, fish oil or common laundry soap dissolved in it and then the carbolic acid added. This is best emulsified by forcing it through a spray pump several times until one gets a good, clean emulsion. This emulsion has been found to be perfectly safe when used on young trees and will drive the ants away. Young trrees with ants around them should be treated in this manner some days before they are banked. Don't ever bank a citrus tree that has a nest of ants around it, as the risk to the tree from damage by ants will be greater than the risk from cold during the winter.

It is an excellent idea to reduce the number of ants in a grove by treating their nests wherever seen. Besides the injury we have mentioned, ants cause indirect injury by lending aid and comfort to some of the farmer's worst enemies. They are fond of the sweet liquid, honeydew, excreted by plant lice and some scale insects, mealybugs, leaf-hopper and tree-hoppers. They constantly attend these insects and interfere with other insects which would parasitize or eat them. The ants even carry these honeydew-secreting insects about and place them on favorite food plants.

After heavy rains is a favorable time to locate ant nests. Rains cause ants to bring up much fresh soil and build their nests higher, making them more conspicious than during dry weather. Also, the barren areas about nests of the agricultural ants are more easily seen when the fields have their maximum growth of vegetation. With a sharp stick make a hole in the center of the ant hill and pour into it a tablespoonful, or more in the case of a large nest, of carbon bisulphide, then at once stamp the dirt over the hole. Remember that carbon bisulphide when mixed with air is explosive and do not smoke during its application.

As soon as the danger of all freezes is past, about the latter part of February, the banks should be pulled down, as both termites and ants get more active as the weather warms up in the spring.

REVIEWING THIS SEASON'S CITRUS PRICES TO DATE

(Continued from page 11)

much higher than at others and, as already stated, it costs more to send fruit to some places than to others.

And so, in summary, we see that Florida citrus prices so far this year have been slightly higher than those prevailing a year ago, but good prices which marked the opening of the season have declined until at present there is only a slight difference above last year's figures.

A pastor of a suburban church made it a point to cordially welcome strangers after the completion of the service.

One Sunday evening a Swedish girl, employed in an aristocratic home, attended services. The pastor extended his hand and expressed the hope she would come again, adding that if she would be at home some evening during the week, he would be pleased to call.

"T'ank you," she murmured, "but Ay have a fella."

The prices of wheat and corn go up and down, but the price of wild oats will always remain the same.

Among Our Advertisers....

The W. H. Ames Co., of Florida, announces this month that they are beginning work on the construction of a $50,000 factory in Tampa for the manufacture of irrigation pipe.

The company's new plant will be located at E. Broadway and 40th street and machinery has already arrived in Tampa for installation in the brick structure which will house the plant.

A. R. Cameron will be general manager of the new factory and is already located in Tampa in charge of the work of installation.

The Florida company is being fostered by the Ames company of San Francisco, Cal., but will be operated independently and not as a subsidiary of the California company.

Mr. Cameron stated that the Florida factory was being established to care for the rapidly growing demands for his company's products, as it forms a part of a portable irrigation system much in demand in Florida groves.

The Cameron & Barkley Co., of Tampa, will serve as exclusive distributors for the products of the Ames company.

Canned Florida Citrus Shows Heavy Increase

The annual statement of the Jacksonville office of the United States Department of Commerce shows a heavy increase in the production of canned citrus segments and juices for the 1938-39 season, when a total of 11,377,638 cases were packed. This was an increase of 3,117,197 cases over the season of 1937-38, and by far the largest pack since the canning industry was introduced in the state.

A total of 9,656,059 field boxes of grapefruit and oranges were used by the canners in the production of the various canned products, principally canned grapefruit juice.

The statement of C. P. Persons, district manager of the Jacksonville office, follows:

Florida Production Canned Grapefruit, Grapefruit Juice, Orange Juice, Etc., for 1938-39 Season

Converted Into Cases of 24 No. 2 Cans

	1938-39	1936-37	1937-38
Grapefruit Segments	3,774,070	4,057,672	3,043,555
Broken Segments	331,705		375,671
Grapefruit Juice	5,502,102	3,918,604	3,370,002
Orange Juice	926,278	498,206	806,183
Citrus Salad	130,562	87,758	84,271
Combination Juice	699,295	271,599	547,329
Orange Segments	13,626		33,430
	11,377,638	8,833,839	8,260,441

	1938-39
Number of field boxes of Grapefruit used for Canning Grapefruit and Citrus Salad	2,956,154
Number of field boxes of Grapefruit used for Canning Grapefruit Juice and Combination Juice	5,516,035
Number of field boxes of Oranges used for Canning Orange Juice, Citrus Salad, Combination Juice and Orange Segments	1,183,870

Packed for Federal Surplus Commodities Corporation, not included in above: Unsweetened Juice, 24/2's - 688,188 Cases — 739,204 field boxes of Grapefruit used.

KEEP YOUR TREES SMILING
with a healthy, balanced diet!

● Give them plant food that will not only satisfy their immediate needs, but will stay with them through a considerable period. This means it will give them plenty of the right kind of nitrogen.

UREA NITROGEN is completely available and highly resistant to leaching. It is long-lasting, as well as quick-acting.

"URAMON" is an attractive form of *Urea Nitrogen.* Included in your top-dresser or regular mixed fertilizer, it will help produce the results you wish—VIGOROUS TREES AND GOOD FRUIT.

DU PONT ON THE AIR—*Listen to "The Cavalcade of America" Tuesdays, 9 p.m. E.S.T. over NBC networks.*

"Uramon" Fertilizer Compound
Reg. U.S. Pat. Off.
(42% *Urea Nitrogen*)
• • •
Urea-Ammonia Liquor
(45% *Nitrogen*)

DU PONT

E. I. DU PONT DE NEMOURS & CO., INC., Ammonia Dept., Wilmington, Delaware . . . Orlando, Florida

ADVERTISEMENT — THE LYONS FERTILIZER CO.

The LYONIZER

Department

COMPILED BY THE LYONS FERTILIZER CO.

Salesmen Report From The Field

POLK AND HIGHLANDS COUNTIES
J. M. Sample

The dry weather continues and quite a number of growers are operating their irrigation systems to relieve heavy loaded trees. The orange market is at present depressed and some of our customers are planning to hold their mid-season variety oranges until after the Holidays in hopes of getting better prices. To growers that plan doing this, it is suggested that they irrigate, if at all possible, the varieties they intend to hold over, including early grapefruit. Continued dry weather can cause a rapid detioriation and droppage to mid-season varieties. To date, grapefruit prices have been very encouraging with the current price offerings being nearly double that of oranges. Most groves have by now been given a liberal application of fall fertilizer, and, in nearly all cases, the proper secondary elements have been supplied in this application.

EAST COAST
F. W. Scott

The fall vegetable crop on the east coast and in the lake region is very short, and at present practically all varieties are bringing fair prices. Tomatoes on the lower east coast are being rapidly planted and indications point to a heavy March and April movement. Potatoes are practically all planted, the crop being about three weeks late. All fall beans, both at Pompano and in the lake section are looking very good. Some potatoes are being dug at the lake.

NORTH CENTRAL FLORIDA
G. W. Phillips

The cold nights with extremely heavy dew are helping very materially in this section to hold up the trees in the continued drought. However, considerable fruit has dropped both from lack of water and from the shock of irrigation. Movement of fruit to market has been speeded up very much. Orange prices are varying from thirty cents to forty-five cents per box, with grapefruit and tangerines from sixty to seventy-five cents. Growers seem to be straining themselves to the limit in their efforts to maintain groves and crops in the best possible condition. Growers are thoroughly cultivating their groves, and using high grade fertilizers with goodly amount of secondary plant foods.

HILLSBORO AND PINELLAS COUNTIES
C. L. Little

In a recent inspection of the personal groves of H. B. and T. V. Snively, it was noted that these two brothers keep their individual properties in tip-top condition. Probably the reason for such heavy cropping.

In a recent survey of the groves fertilized by ourselves in the Avon Park section, the general concensus of opinion from our passengers on the trip, who happened to be prospective customers, was that "our" groves certainly looked excellent. In fact, one of our prospects asked if we did anything special to the groves — they looked so well.

SOUTHWEST FLORIDA
Frank Dillenger

The celery deal at Sarasota is looking a great deal better than it did several weeks ago, with a definite improvement in growth and general quality. Several growers in the Sarasota section have made small shipments. Growers in the Ruskin territory are planning to increase their acreage of tomatoes during the spring season. Every indication at this time is that this territory will have its largest acreage during the coming season. The fall crop in this section, speaking generally, was very good, and most of the growers realized a profit from their operations.

WEST CENTRAL FLORIDA
E. A. McCartney

Strawberries are beginning to move from the Plant City area, with prices within a satisfactory range. Movements will be a great deal heavier within the next few weeks. In Hernando county most of the growers are feeling much encouraged over the prospect of receiving a good price for tangerines. General conditions throughout this section are very good, and most of the growers, both citrus and vegetable, are feeling very optismistic about the prospects in view for the next several months.

Personal Items

The many friends of E. A. "Mac" McCartney will be glad to learn that he is very much improved after being confined to his bed for the past few weeks. "Mac" will soon be on the job again.

Congratulations to our good friend and agent, J. D. Hawkins on being overwhelmingly re-elected mayor of Oakland Park.

We are glad to announce a new addition to the Lyons dealer organization. We are glad to have Melvin Hayes, Ft. Pierce with us, and assure him our cooperation in conducting his business throughout the territory.

Alvin McHargue of Ruskin has one of the finest crops of tomatoes in his section. This crop is carrying through the season in fine shape and is an excellent demonstration of the value of LYONS fertilizer.

ADVERTISEMENT — THE LYONS FERTILIZER CO.

JANUARY SUGGESTIONS FOR FARM AND GROVE CARE

Prepared by Horticultural Department, Lyons Fertilizer Company

CULTIVATION

Very little cultivation is required for grove care during the month. However, with continued dry weather it is advisable to maintain soil mulch over the grove. Vegetable crops should be worked frequently as this will not only maintain moisture, but will serve to keep roots of various plants stimulated to sufficient extent to absorb enough plant foods to maintain proper growth of plants.

PEST CONTROL

For Citrus: Few warm days may mean infestation of rust mite. Keep careful check on this insect, and if they make an appearance, keep under control with either sulphur dust or lime-sulphur spray. There are many cases where nutritional spray can be used in spring to advantage. Keep this in mind but be sure and do not use this spray until after fruit crop has been removed.

FERTILIZER

We assume that you have made a liberal application of fertilizer during the fall application. If you have, then follow with a quick acting fertilizer during the latter part of this month or the first of February. If you did not use liberal quantities of fertilizer during the fall, then now is the time to use one of LYONS' topdressers to assist in setting a bumper crop of fruit this spring. **Consult A Lyons Field Man NOW for Fertilizer Program** to be used this spring and balance of year. All vegetable crops should receive adequate amount of fertilizer to take care of growth of plant and at the same time assure full development of present crop.

SPRAY PROGRAM

Keep all insects and diseases under control on vegetable crops. The Lyons man will advise you regarding this situation. Make plans at this time for your spray program on citrus for the coming season. Orange Manufacturing Co., products, and Lyons Service can be of much assistance to you.

COVER CROPS

Even in January, now, you should begin to consider your cover crops for the coming season. Make every effort to establish outstanding cover crop this summer. Alyce clover is proving to be an outstanding crop. However, this crop requires certain soil types, but inquire from the Lyons Field Man as to the most suitable crop. This service belongs to you, and we assure you that our field man is in position to give you the information.

PRUNING

Remove all dead wood. This operation will assist materially in control of melanose next spring and summer.

A GOOD RESOLUTION

This is the time of year to make resolutions. Well, we made one a great many years ago, and today it is still in effect. In other words, when the Lyons Fertilizer Company was organized we resolved to make the best fertilizer in Florida, and to give our customers an outstanding service, and today it is with a great deal of pride that we can say that this resolution has never been broken.

A. J. Hereford, Bradenton, has recently completed a machine that is the finest thing we have ever seen to prepare new land for planting. This machine extracts all roots from the soil, cuts them into very small pieces, and at the same time does a thorough job of pulverizing the soil. It occurs to us that this is the ideal machine for the cattlemen to use in preparing their pasture land for various grass crops.

Arthur Gocio, Sarasota, is justly proud of his very fine grove property and has a very fine crop of fruit. In addition to his ability as a grove man, Arthur is an excellent bird shot, and a great man for the out-of-doors.

Little Bits of FUN

KNEW THE BUSINESS

An old negro man passed before a notice recently posted by the sheriff and laboriously spelled out the large letters:

"THIEF WANTED!"

"Reckon Ah better take it," he muttered, after some study. "Cindy said not to come home widout a job, an' dey ain't nothin' else Ah can do so good. But"—gloomily—"Ad sho' does hate dem dawgs and bird shot."

McPherson's condition was critical and his wife, much against her will, was obliged to leave him for a short time. As she looked down at his shrunken form, her hard face softened and the tears welled from her eyes. Pulling herself together with an effort, she put her her old bonnet on and returned to the bed to say goodbye. "Now remember, Angus, no extravanance. If yer feel yerself going, blow out the light."

THEY MULTIPLIED

"Say, mister," said the little fellow to a next door neighbor. "Are you the man who gave my brother a dog last week?"

"Yes."

"Well, Ma says for you to come and take them back."

A fat lady stepped on the scales, not knowing they were out of order, and put in a penny. The scales went up to 57 pounds and stopped. A newsboy standing by noticed the situation. "My Gawd!" he cried. "She's hollow!"

Diner: "Where's the menu?"

Colored Waitress: "Down the hall, three doors to de left, sir."

When God created man, He gave him two ends — one to sit on and one to think with. Ever since them man's success or failure has been dependent on the one he used most.

SOME SYMPTOMS OF CITRUS MALNUTRITION IN FLORIDA

(Continued from page 7)

necessary for the removal of dead wood following crop removal from magnesium-deficient trees. The potential bearing surface of the tree is greatly reduced and in severe cases the tree may actually decrease in size.

Fruit Symptoms

No striking fruit symptoms are associated with magnesium deficiency but there is a general decline in production and a reduction in the average size of individual fruits. This reduction is the normal result of severe defoliation. Quality of the fruit is lowered and droppage greatly increased. Considerable sunburn and wind scarring result from the defoliation and the presence of many dead twigs.

Modifications of Symptoms

Since magnesium deficiency is associated primarily with fruit production the principal modification that must be taken into consideration is the failure of typical symptoms to develop when there is no crop produced. This may lead to the conclusion that the deficiency has disappeared when it is only the symptoms which are associated with production that have disappeared. Seedy varieties of grapefruit under conditions of acute magnesium deficiency frequently bear only every other year and during the alternate years appear to be devoid of magnesium deficiency. Other factors also may cause loss of crop and the consequent disappearance of symptoms. Copper deficiency which is frequently associated with magnesium deficiency on acid sandy soils is a common cause of such crop loss, and zinc deficiency may produce similar results. Under such conditions application of the element that is temporarily limiting production is likely to cause the setting of a heavy crop and subsequent development of acute magnesium deficiency symptoms as the crop matures.

Varietal Susceptibility

Magnesium deficiency is associated closely with seediness and varietal differences are usually a reflection of the seed content of the fruit. Seedy grapefruit varieties are commonly and conspicuously affected, due both to their seediness and their tendency to cluster production which puts excessive strain on individual branches with the result that portions of the tree may show a preponderance of yellow leaves while the remainder of the foliage is green. Pineapple and other seedy varieties of oranges are acutely affected, whereas Hamlins and other seedless or nearly seedless varieties are less affected. Varieties, such as Valencia, which retain their fruit for long periods are affected somewhat more than their seediness would seem to justify, probably due to the prolonged drain on the tree.

Causation

The two primary causes of the extensive development of magnesium deficiency are the large magnesium requirement of citrus and the failure to apply magnesium when fertilizing soils low in this element. This situation is aggravated by allowing sandy soils low in magnesium to become too acid, with the resultant loss of magnesium by leaching. In practice magnesium deficiency of citrus is commonly associated with sandy soils having a pH of less than 5.0. Under such conditions the level of exchangeable magnesium will commonly be below 15 pounds per acre if no magnesium-bearing materials have been applied. There is no evidence that magnesium is being fixed to any extent in an unavailable form in Florida citrus soils. In fact, the soils highest in exchangeable magnesium are the marl bearing soils and on these magnesium deficiency symptoms are rarely seen.

Treatment

Dolomitic limestone and magnesium sulfate are commonly used to correct magnesium deficiency. The former is used on acid soils both to furnish magnesium and to raise the pH, while the latter is commonly used on soils above pH 6.0 and also as a supplement to dolomitic limestone on acid soils. Since the release of available magnesium from dolomitic limestone is primarily dependent on the reaction between acids in the soil and carbonates in the limestone, initial correction of magnesium deficiency on dry sandy soils is likely to be slow when this material alone is used. Usually it is the second year before results are apparent. Under such

Uncle Natchel says . . .

WHENEVER, wherever you use nitrate, be sure it is Natural Chilean Nitrate of Soda. It is the world's only natural nitrate. It is the "natchel" food for bigger, better crops.

Chilean Nitrate is guaranteed 16% nitrogen. It also contains, in natural blend, many other plant food elements — protective elements such as iron, manganese, magnesium, boron, iodine, calcium, potash, zinc, copper and many more. These protective elements act much like vitamins in their effect on your crops.

Use Natural Chilean Nitrate. It is well suited to your crops, your soil, your climate. No price increase this entire season, and there is plenty for everybody's needs.

NATURAL

CHILEAN NITRATE OF SODA

ON YOUR RADIO Enjoy the Uncle Natchel program every Saturday night on WSB, WRVA, and WSM, and every Sunday afternoon on WIS, WOLS, WPTF, WBT, KWKH, WJDX, WMC, WWL, WAGF, WDBO, WSFA, WJRD, WJBY.

conditions water soluble magnesium in the form of magnesium sulfate usually is applied with the dolomitic limestone to furnish immediately available magnesium. Magnesium sulfate is used also to supplement dolomitic limestone particularly when the trees are carrying an unusually heavy crop. High calcium limestone is used to some extent to correct the soil reaction and is supplemented with magnesium sulfate. Calcium limestone alone will not correct magnesium deficiency and may make it more acute by widening the ratio between calcium and magnesium in the soil. When calcium limestone is used in conjunction with magnesium sulfate the latter corrects the magnesium deficiency while the former raises the pH so that more of the magnesium will be retained in the exchangeable form. Calcium limestone is not extensively used since an over-supply of it will raise the pH too high, and bring on zinc and manganese deficiency, whereas dolomitic limestone is much safer in this regard. In addition to the factor of safety, dolomitic limestone is much more suitable for mixing with fertilizer materials since it will not cause a loss of ammonia from the mixture.

(Continued next issue)

TEXAS WOULD BAN CALIFORNIA FRUIT

Confronted with losing prices for their citrus fruits, Texas growers, or at least some of them, are agitating for a quarantine against the entry of California fruits into Texas in competition with the home grown frruit. The Mission Times, published in the heart of the Texas citrus belt, tells of this movement as follows:

In an effort to evolve some workable plan to bring relief to Texas citrus growers, E. M. Goodwin recently wrote a letter to J. M. Del Curto, chief of the division of plant quarantine, State Department of Agriculture, in which he asked that California citrus be barred from Texas markets.

Mr. Goodwin's letter follows:

"I very much appreciate your letter of November 23, replying to my letters to Mr. McDonald of October 24 and November 16 concerning shipment of California citrus fruits into Texas.

"I have never before recommended the enforcement of quarantines as a means of preventing commerce between communities and states.

"However, in consideration of the very serious economic condition facing the growers of Texas oranges, and in view of California's having made her quarantine regulations so effective as not to permit the shipment of Texas fruit into the state of California, even going to the extent of searching the individual baggage of tourists crossing her borders to prevent one single Texas grapefruit or orange from getting into Californit, I believe Texas is clearly justified in using whatever authority it has within the law to protect Texas growers of grapefruit and oranges against competition from grapefruit and oranges grown in a state which deems it practical and to the best interest of her growers to prevent competition from citrus fruits grown in Texas.

"If any action along these lines is anticipated, it should be immediate, because each day action is delayed, the benefits to the growers of oranges in Texas are materially decreased, for Texas oranges are moving to the market at the rate of from twenty-five to fifty carloads a day.

"I realize that before taking any action, the Commissioner wants to be sure of his grounds. However, the need for action, if the taking of any action is feasible and practicable, i immediate, and I think should be placed first, or at least as near the head of the list of matters for attention as possible.

"Shippers of citrus fruits in the Valley, in cooperation with the Commissioner and his assistants, are endeavoring to perfect organization and procedure for uniform price quotations. However, the plight of the citrus grower is so desperate at this time as to require action — and quick action — on all fronts.

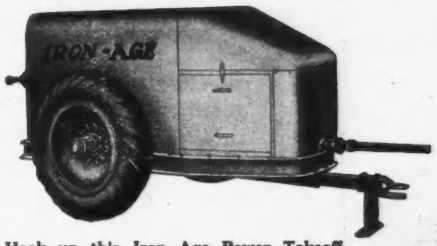
"I, therefore, hope that you will not be delayed in securing the information which you say will be necessary before definite action can be taken."

MORE HOME GARDENS

The value of the home garden for the family is being recognized more and more by St. Johns county farmers. County Agent Loomis Blitch reports that a much larger acreage will be devoted to this purpose this fall and winter than in several years. St. Johns county farmers are also trying out the new Iceberg lettuce this season.

More Thorough Spraying Per Dollar with High Pressure

IRON AGE VICTORY PUMP



Hook up this Iron Age Power Takeoff sprayer to your tractor, fill the tank, and you're ready to go. Ideal for grove or orchard use.

HIGH PRESSURE VICTORY PUMPS are built in 6, 10, 14, 20 and 37 gallon-per-minute capacities. Working pressures are up to 600 lbs. P. S. I. in the 6 and 10 gallon sizes; 1000 lbs. P. S. I. in the 14, 20 and 37 gallon sizes. Easiest pump to understand, the Victory is completely equipped with built-in strainer, pressure regulator and air chamber. Its displacement efficiency is 99.5% plus.

Whether you're a large grower or small, the high pressure IRON AGE sprayer — with its smooth-working, slow-speed, long-life Victory pump — assures you low-cost, efficient spraying for your grove or orchard. Farquhar makes an Iron Age sprayer for every grove or orchard use.

Iron Age Short Turn Power sprayer passes through closely planted groves or orchards with ease, can be pulled by tractor or team.

Distributors:

HECTOR SUPPLY CO., Miami, Fla. SUPERIOR FERTILIZER CO., Tampa, Fla.

Write for new sprayer manual

A.B. FARQUHAR CO., LTD., 4334 DUKE ST., YORK, PA.

WORK OF FLORIDA COLLEGE OF AGRICULTURE DURING 1939

(Continued from page 5)

as in other states, there are representatives of all official State and Federal agencies dealing with the use of land, as well as outstanding farmers and farm women. The committee is already making progress in setting up new land-use plans and putting them into effect in one county.

Florida today has more county and home demonstration agents than ever before. 61 counties have either a county agent or home demonstration agent or both. The College of Agriculture is represented in these 61 counties by 60 county agents and assistant county agents, 40 home demonstration agents and assistant home agents, and by 16 colored agents.

Another development of the year has been the inauguration of Extension farm forestry work, which gives particular attention to helping the farmer in the management of his forest land so he may enjoy stabilized and better financial returns from them.

Notably successful from the farmer's standpoint has been the Conservation Program of the Agricultural Adjustment Administration, which was handled by the Agricultural Extension Service. Under this program Florida farmers have received payments from Uncle Sam this year amounting to two and one-half million dollars for carrying out soil building and conservation practices on their farms. Cooperating with the AAA, Florida cattlemen have seeded more than 50,000 acres of new pastures this year.

Distinct progress has been made in beef cattle improvement, 4-H Club work, poultry improvement, home gardening, food preservation, and many other things.

That the efforts of this institution along these lines are appreciated is attested by the fact that over 6,000 letters a month asking for information are received at our offices in Gainesville. Each year we use over two million sheets of letter and mimeograph paper in supplying information in response to these letters. At the branch Experiment Stations there are thousands of additional requests for information and guidance, and the County and Home Demonstration offices throughout the State answered 104,062 letters and 69,588 telephone calls and received 282,639 visitors in a year's time.

On the campus of the University of Florida we find that the Agricultural College graduated the largest class in its history and that both students and faculty have shown unparalleled enthusiasm in their work. Beginning in September, the Departments of Soils and Agronomy were separated and each set up with a stronger teaching organization. Similar changes were made in the instructional work in horticulture and plant pathology. A modern agricultural chemistry laboratory for student use has been installed, and the soils laboratory has been improved.

Outstanding among the many student activities was the Little International Livestock Show and Rodeo staged by the student organization, the Block and Bridle Club. Approximately 10,000 people attended this event.

The School of Forestry during the past twelve months has added improvements and equipment, particularly in the 2,000-acre Austin Cary Memorial Forest near Gainesville. In this, the school enjoyed valuable assistance from the Works Progress Administration.

The School of Forestry has also taken over the management of the 2500-acre forest tract acquired by the University during the year at Welaka. Interest in the School of

BROGDEX
REDUCES DECAY
RETARDS SHRINKAGE

THE ADVANTAGES OF OUR SERVICE

Less Decay
A Better and More Permanent Polish
Better Keeping Qualities in the dealer's hands
A better color at a lower temperature
Less damage in coloring rooms
More weight per box upon arrival
Tight straps and a full box
Fewer adjustments on F. O. B. sales

THE COST

The savings on refrigeration and decay and on adjustments on F. O. B. sales will more than pay the small service charge. The savings on refrigeration and the higher prices received on auction sales will leave a substantial profit above the cost.

The satisfaction your fruit will give due to its superior keeping qualities will mean more F. O. B. sales.

May we discuss the matter with you?

B. C. SKINNER
DISTRIBUTOR

Brogdex Process
Color Added Process
Coloring Room Process

Dunedin, Fla.

Forestry has brought to the campus many meetings and conventions, including meetings of the Southeastern section of the Society of American Foresters, the Southern Shade Tree Conference, and others.

In conclusion, may I point out that the aim and purpose of the College of Agriculture in all its branches is to offer education in agricultural subjects, through research and Extension, add new knowledge to the available store of useful information, and at the same time, give wholehearted, practical assistance to rural people in their many problems.

We wish you a very happy, prosperous New Year.

STATE HORTICULTURAL SOCIETY ANNUAL MEETING APRIL 2-4

(Continued from page 4)

the night session Thursday night, and the last session promises to be decidedly interesting in that two debates upon controversial subjects of vital interest to the citrus industry of the state are being arranged.

One of the outstanding features of the affair will be the conferring of additional honorary memberships upon outstanding figures in the state who have long been associated with horticultural affairs. This ceremony will take place at the annual banquet to be held on Wednesday night, and will be remembered as one of the highlights of last year's convention.

Details concerning arrangements and program will be published in ample time prior to the actual meeting.

THE GROWERS' OWN PAGE

(Continued from page 9)

Florida oranges to California oranges some weeks ago due to the fact that most of the Florida oranges are of such poor quality and had such a peculiar taste that no one in my household would eat them.

I think you were wise in bringing this matter to the attention of the citrus fruit growers.

I happen to represent some Florida property including a citrus fruit grove and I am, therefore, naturally interested in Florida having a good market for its product.

Yours very truly,
CHARLES E. ECKER.

CEE:GC.

SPENCER NAMED HEAD OF FLORIDA ENTOMOLOGY SOCIETY AT ANNUAL MEET

Election of new officers and discussion of various insect pests of the state were features of the recent annual meeting of the Florida Entomological Society in Gainesville.

Dr. Herbert Spencer, U. S. D. A. entomologist stationed at Ft. Pierce, was elected president, succeeding Dr. J. H. Montgomery, State Plant Board quarantine inspector. Other officers elected at the two-day meeting are Dr. Homer Hixson, Gainesville, vice president, Dr. A. N. Tissot, Gainesville, secretary, and Dr. J. W. Wilson, Belle Glade, treasurer. Dr. Hixson and Dr. Tissot are University of Florida entomologists, while Dr. Wilson is entomologist at the Everglades Experiment Station at Belle Glade.

Sixty-five entomologists attended the meeting.

Spraying with arsenate of lead is effective in controliing army worms on roses.

Have You Booked Your

Calcium Nitrate

For better crops at lower cost use Calcium Nitrate before the bloom. Then follow through with

NITROPHOSKA

This rich complete fertilizer is a real money saver. A grade for every need.

See your fertilizer dealer or write us for prices, information and unexcelled field service

Jackson Grain Company

State Distributors

Tampa, Florida

Orange Juice As A Source Of Calcium

The conclusion that orange juice not only provides calcium in itself but also enables the human body to assimilate greater amounts of calcium from other food sources has recently been substantiated by Dr. Caroline Sherman Lanford and corfreres, Dr. A. B. McCreary, Florida state health officer stated recently in an interview.

The discovery, described as "of unquestionable significance" by medical authorities, was made during laboratory researches conducted by Dr. Lanford of the department of chemistry, Columbia University, under a grant from the Florida citrus commission.

The tests showed conclusively that the proportion of calcium of the entire diet stored in the body when orange juice was fed was about eight per cent greater than when this citrus fruit was eliminated from the diet.

"Ever since the work of Cheney and Blunt, nutritionists have been interested in the theory that orange juice in some way favors the retention of calcium in growing children," Dr. McCreary said. "However, laboratory proof of the theory has been lacking. The scientific advisory board of the Florida citrus commission established a grant for a scientifically controlled study of the subject.

"Dr. Lanford undertook the study. She used two sets of laboratory animals, feeding one group a mixture of wheat and milk only, and the other the same diet with orange juice added. At the conclusion of the test period, it was found that the group fed on orange juice grew about 10 per cent more rapidly than the animals fed the control diet.

"It was also found that these animals assimilated a greater amount and a higher percentage of the food calcium than did the control animals which received the diet without orange juice.

"It has not yet been determined exactly what factor in the orange juice is responsible for this increased assimilation of ingested calcium. It is probable, however, that the citrates and critic acid play an important part.

"The important fact for parents is the definite proof that orange juice not only is beneficial in itself but helps the body utilize calcium in other foods to build healthy bones and bodies."

Dr. McCreary concluded from the study that results obtained may be applicable to growing children, and that orange juice added to the diet should aid the growth rate considerably, and build for stronger bones and teeth.

To cooperate with Florida's citrus industry, Dr. McCreary will send reprints of the report of the tests to other state health departments, to medical schools and to others in key medical positions throughout the country.

67% AIR CONDITIONED 10170
JACKSONVILLE'S LARGEST and FINEST HOTEL
300 Rooms 300 Baths
The ROOSEVELT
GARAGE Directly Connected With Lobby
JACKSONVILLE FLORIDA
Charlie Griner Manager
Conveniently located in the downtown business, shopping and theater district. Every room an outside room (no court) with private bath, circulating ice water, radio, fan and bed reading lamp. Suites of parlor, bedroom and bath. Superior cuisine and service in The Patio Grill and The Rendezvous.
Our Lobby, Dining Rooms, Lounge, Beauty Parlor, Barber Shop and all public rooms are completely air conditioned. More than half of our Guest Rooms are individually air conditioned—no re-circulation of air from one guest room to another. This modern, hospital-approved system is an exclusive feature of The Roosevelt.
Drive your automobile into the Hotel Roosevelt Garage, which is directly connected with our Lobby.
All Outside Rooms - No Court
Circulating Ice Water
Tub and Shower in Every Room
$2.00 UP
A Robert R. Meyer Hotel

CLASSIFIED Advertisments

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

FOR SALE — Niagara power duster, Model F, good as new, equipped with 4 HP Cushman engine, mounted on iron wheel truck. $250. C. O. Reiff, Marianna, Fla.

40,000 CITRUS TREES For Sale — Selling out cheap. All standard varieties. A. M. Harvey, 818 South First St., Winter Haven, Fla.

LEMON SEEDLINGS—20 M rough lemon seedlings pencil size to half inch. W. M. Caldwell, Box 272, Sebring.

SUPERIOR CITRUS TREES of principal varieties. Also limes, lemons and the best new varieties of tangelos and avocados. Ward's Nursery, Avon Park, Florida.

GRAFTED AVOCADO TREES of leading varieties, priced low. R. B. Rosentreter, Winter Haven, Fla.

CITRUS BUDS AND SEEDLINGS—Usual Standard Varieties on Sour Orange Stock, also Sour Orange Seedlings. Nursery at Blanton, Pasco County. For information and prices, write R. P. Thornton or H. S. Pollard, Copothorn Nurseries, Box 2880, Tampa, Florida.

MANURE — Stable and Dairy Manure in car lots. Write for prices. P. O. Box 2022. Jacksonville, Fla.

CITRUS SEEDLINGS; Cleopatra, Sour, Sweet, Rough Lemon, Grapefruit. Grand Island Nurseries, Eustis, Fla.

CROTALARIA SPECTABILIS and Hay Peas. Write for our prices. We also have a full and complete line of all farm seeds. Robinson's Seed Warehouse, Cairo, Georgia.

ALYCE CLOVER SEED. Ripe and cleaned. Ideal cover and hay crop, Write for information. P. E. Synder, Box 866, Lakeland, Fla.

CROTALARIA SPECTABILIS — Fresh crop, $15.00 per 100 lbs. f. o. b. Frostproof, Fla. Milton Woodley, Frostproof, Fla.

CHOICE Rough Lemon Seedlings 6 to 20 inches high, $10.00 per thousand. Olan Altman, Sebring, Florida.

"MAIL ORDER Operator desires contact with grower of high grade avocado pears. Have interesting proposition for grower of highest quality fruit." F. R. Gardner, P. O. Box 528, Greenville, Pa.

LARGE AND SMALL orange groves for sale also acreage suited for citrus culture, dairying and general farming. Charlton & Associates, Valuation Engineers and Real Estate Appraisers, Ft. Lauderdale, Fla.

CITRUS NURSERY TREES; Standard and new varieties. Low prices for Fall planting. Grand Island Nurseries, Eustis, Fla.

An Early Survey Of Florida's Recent Cold Spell

By S. Lloyd Frisbie

Just what may be the sum total of the damage of the recent cold spell in Florida to the citrus industry of the state is a question which even the most hardy prognosticator appears at this writing most hesitant to answer.

However, demonstrating the unparalleled ability of Florida's citrus industry to "bounce back" all over again, the industry even as early as Tuesday, January 30th, when this is written is apparently coming out of the numbing shock which affected it when freezing weather actually laid its icy tentacles upon Florida's bountiful crop of citrus.

For practically two weeks Florida has been subjected to a period of uninterrupted cold weather which culminated Sunday night, Jan. 28th, with temperatures which are reported variously not to have been felt in this state from 1895 up to 1934.

In any event temperatures as low as 10 degrees above zero were prevalent in the northern section of the state while in the Ridge section and along the east coast there were periods of brief duration when the thermometer hit spots as low as 18 degrees.

In most sections of central Florida however the thermometer did not go below 25 for any considerable period except in unusually low spots where temperatures of 20 degrees were felt during portions of the two days and nights of Jan. 28th and 29th.

While it has been impossible to get anyone who may be classed as an authority to definitely commit himself or permit himself to be quoted, it is generally conceded by fruitmen who should be best posted that virtually all of the mid-season fruit which remained on the trees was killed.

For several days growers who were equipped to do so fired their groves through the night and in the early hours of the morning and among some of these the reports indicate that a very considerable portion of their total crops was saved and that no tree damage was done.

State supervising inspector George E. Copeland indicated that while damage will doubtless be great that in his opinion the losses would not be as great as temperature readings would indicate, largely because trees were in a more dormant condition "than I have seen them in my 14 years with the department."

Another authority who preferred that his name be omitted from the quotation stated that while the first shock of the freeze had a decidedly numbing effect upon the industry the coming of milder weather has already brought justifiable hope to the growers of the state.

"The condition through which we have just passed," stated this authority, "is without parallel in the history of Florida's citrus industry. I do not believe there is any question but that practically all of the mid-season oranges are gone, but I am fully confident that there will be a most encouraging salvage in the Valencia crop and I do believe I am not being artificially optimistic when I say that I believe fully half of the grapefruit will be found entirely suitable for use."

This authority based his opinion upon the fact that no Florida freeze had ever been preceded by so long a period of cold weather and that the rains just prior to the extreme cold still further helped to place the trees in the best possible condition to resist the ravages of cold weather.

This writer prior to writing this report made an extensive canvass of growers over Polk county and while fruit losses generally were admitted to be most severe there was as yet little evidence of damage to trees save in isolated sections.

Of course, it is entirely possible that damage to trees may show up in greater degree after a few days of warm weather prevails, but at this writing it is our opinion that first reports of the extent of tree damage over the citrus area as a whole were exaggerated.

There is no denying the fact that the damage as a whole has been most severe, yet the fact remains that with the prospect of salvaging a fair proportion of the Valencia crop and a portion of the grapefruit crop at this moment looks more propitious than was the case a day or two ago.

Several nurseries which the writer had occasion to contact indicate that their nursery stocks appeared to have weathered the freeze with virtually no damage — indeed, for whatever the reason, the outward appearance of nursery stock and young trees indicated that the young trees as a whole appeared to suffer less than the older ones.

Senator Spessard L. Holland, anticipating the urgency of federal action to assist those who have suffered damage during the recent freeze wired both United States Senators and all of Florida's Representatives in Washington Monday urging that citrus growers, truck growers and live stock men who had suffered severe losses be accorded early consideration by the federal government.

Senator Holland specifically suggested that a moratorium be declared on the payment of crop production loans, installments on federal land and commissioner's loans, and facility and production loans from bank co-operatives. He also suggested that

(Continued on page 19)

Silver Jubilee Year

The People of Florida Need

Spessard L. Holland

For Governor

The Citrus Growers of Florida can be of valuable assistance in bringing about Holland's election — and this group as much as any other factor in the state has had ample opportunity to observe the efforts of Holland to serve their industry.

No Grower in Florida, whether he be the owner of five acres of grove or of a thousand, can justly claim that Spessard Holland has not sought valiantly to bring about conditions which would be helpful to the entire industry in this state.

In representing the growers on the occasions of federal official hearings in Florida, in repeatedly going to Washington to represent the industry in hearings before the Department of Agriculture, in working unselfishly and without stint in the state legislature to serve the interests of the growers of Florida, Holland's record is unblemished and resultful.

A MAN SO THOROUGHLY FAMILIAR WITH THE NEEDS OF THE CITRUS INDUSTRY OF FLORIDA WOULD MAKE A MOST DESIRABLE REPRESENTATIVE TO HAVE IN THE GOVERNOR'S CHAIR — A fact with which by far the majority of citrus growers of the state are already familiar.

Holland knows that politics have no place in the operation of the Citrus Industry of Florida and would see to it that politics were not permitted to interfere with the well-being of Florida's citrus growers.

His familiarity with the citrus problems of the state lacks much of being Holland's only qualification for the job of Governor of Florida.

His outstanding war record was officially recognized by the government when he was awarded the coveted DSC medal for distinguished service in the World War.

His record of fearlessness did not end when he left the army. He has proven throughout his years of public life that he is not a fence-straddler. Often in the face of powerful opposition he has fought courageously to uphold the rights of the people as state senator. He has at times espoused causes which at the time were not entirely popular, but results have demonstrated that the position he took was sound and beneficial to the largest number of citizens.

His election will mean a Clean, Honest, Progressive administration — an administration founded on Common Sense and operated with a Sympathetic and Tolerant consideration of the rights of the people of Florida. It will be an administration in which the citrus industry will NOT be the Pawn of politics.

Holland's popularity as a Gubernatorial Candidate is growing rapidly in every section of Florida.

BE WITH THE WINNER FROM THE START — VOTE FOR AND SUPPORT HOLLAND'S CANDIDACY FOR GOVERNOR

(This advertisement written and paid for by a group of Polk county citrus growers who want to see the citrus industry of Florida and the state as a whole profit by the election of Spessard L. Holland as Governor.)

(Paid Political Advertisement)